



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,171	12/07/2001	Jean Louis Calvignac	RAL920010016US1	5856
26675	7590	12/13/2005	EXAMINER	
DRIGGS, LUCAS, BRUBAKER & HOGG CO. L.P.A. 38500 CHARDON ROAD DEPT. IRA WILLOUGBY HILLS, OH 44094			SHAH, NILESH R	
			ART UNIT	PAPER NUMBER
			2195	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/017,171	<b>Applicant(s)</b> CALVIGNAC ET AL.	
	<b>Examiner</b> Nilesh Shah	<b>Art Unit</b> 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-3,5-18 are presented for examination.-

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1 –3, 5-9,15-18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, line 10 if the applicant meant to state “outputs from said buffers to an output bus in the order that inputs were INPUTED on the”? Currently, the claims state “outputs from said buffers to an output bus in the order that inputs were OUTPUTTED on the” which is unclear.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2195

4. Claims 1-3,5-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laurenti et al (6,658,578) (hereinafter Laurenti) in view of Koga (5,530,904).
5. As per claim 1, Laurenti teaches the invention substantially as claimed including a communication parallel processing system comprising:  
  
N task orientated processing devices, where,-in N is greater than 1 and each of the task-oriented devices providing a particular function (fig. 1, 10; col. 1 lines 51-65;col. 2 lines 50-57;col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46); and  
  
M buffers connected to said input bus, M greater than 1, each one adaptable to operate in a plurality of different phases operatively coupled to the N task orientated processing devices (col. 176 lines 20-35; col. 79 lines 15-25;col. 8 lines 39-57).
6. Laurenti does not specifically teach the use of a Time Division Multiplex controller.  
  
Koga teaches a Time Division Multiplex Control mechanism operatively connected to the M buffers and imposing respective ones of the different phases on said M buffers to deliver outputs from said buffers to an output bus in the order that inputs were outputs on the said input bus (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).
7. It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Laurenti and Koga because Koga's Time Division Multiplex Control mechanism would improve Laurenti's system by allowing the segments to be divided into time segments thus making the system more efficient.

8. As per claim 2, Laurenti teaches the parallel processing system wherein  $M = N$  (col. 1 lines 51-65; col. 2 lines 50-57; col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46).
9. As per claim 3, Laurenti teaches the parallel processing system wherein the particular function includes cryptography (col. 75 lines 15-40; col. 111 lines 28-33; col. 304 lines 3-10).
10. As per claim 5, Laurenti teaches the parallel processing system wherein the plurality of different phases include a Fast Write Phase, a Slow Read Phase, a Slow Write Phase and a Fast Read Phase (fig. 15, 16, 19, 20, 23, 24, 140; col. 157 lines 50-60; col. 158 lines 1-28; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12).
11. As per claim 6, Laurenti teaches the parallel processing system wherein said each one of the M buffers further includes a slow write port receiving data if said each one of the M buffers is in the Slow Write Phase, a slow read port providing data if said each one of the M buffers is in the Slow Read Phase, a fast write port receiving data if said each one of the M buffers is in a Fast Write Phase and a Fast Read Phase providing data if said each one of the M buffers is in a Fast Read Phase (fig. 15, 16, 19, 20, 23, 24, 140; col. 157 lines 50-60; col. 158 lines 1-28; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12).

12. As per claim 7, Laurenti teaches wherein the mechanism includes one slow read address generator operatively coupled to at least one of the M buffers, one Slow Write address generator (fig. 38; col. 9 lines 5-31) operatively coupled to the at least one of the M buffers, one Fast Read address generator operatively coupled to the at least one of the M buffers, and at least one fast right address generator operatively coupled to said at least one of the M buffers (col. 157 lines 50-60; col. 158 lines 1-28; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12) and

Read Reset signal that drives the slow read address generator and the at least one Fast read address generator and a write reset signal that drives the fast write address generator and the slow write address generator (fig. 15, 16,19,20,23,24,140; col. 157 lines 50-60; col. 158 lines 1-28; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12).

Koga teaches a Time Division Multiplex Control mechanism (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).

13. As per claim 8, Laurenti teaches the parallel processing system wherein the address generator includes a binary counter (col. 178 lines 52-67; col. 9 lines 5-31);  
an address bus operatively coupled to the binary counter(col. 178 lines 52-67);  
a decoder operatively coupled to the address bus and an inverter operatively coupled to the decoder(col. 75 lines 15-40; col. 111 lines 28-33;col. 304 lines 3-10);  
an OR gate having a first input coupled to the inverter and a second input coupled to a Reset signal (col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37);

an AND gate having a first input coupled to the OR gate, a second input coupled to a clock line and an output coupled to the binary counter(col. 75 lines 15-40; col. 111 lines 28-33;col. 304 lines 3-10).

Koga teaches a Time Division Multiplex Control mechanism (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).

14. As per claim 9, Laurenti teaches the parallel processing system wherein the control circuit arrangement includes a time base free naming counter (col. 178 lines 52-67; col. 9 lines 5-31);
- a Reset Decoder operatively coupled to the output of the time base, free naming counter (col. 176 lines 20-32; col. 132 lines 36-67);
- a circuit arrangement that monitors space available in each of the M buffers and outputs a control pulse if the available space is less than the space required to store a predetermined size data block (col. 1 lines 51-65;col. 2 lines 50-57;col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46);
- a delay line; and a buffer counter operatively coupled to the delay line and the circuit arrangement (fig 61, 68, 93; col. 110 lines 50-67).
- Koga teaches a Time Division Multiplex Control mechanism (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).

15. As per claim 10, Laurenti teaches the parallel processing system wherein

providing at least one process engine that provides a predetermined task, providing at least one buffer operatively coupled to the process engine (col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46);

putting the at least one buffer in a fast write mode wherein data is received and written into said buffer at a first speed (table 95; col. 165 lines 12-25; col. 149 lines 65-15);

putting the buffer in a slow read mode wherein data is read from the buffer into the at least one process engine at a second speed (col. 2 lines 50-57; col. 98 lines 1-45; col. 98 lines 55-67; col. 165 lines 12-25; col. 149 lines 65-15);

activating the at least one process engine to process data read out of the buffer (col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46);

putting the at least one buffer in slow write mode wherein processed data is written into the buffer from the at least one process engine at a third speed (table 95; col. 165 lines 12-25; col. 149 lines 65-15; and

putting the at least one buffer in a fast write mode wherein processed data is read out of the buffer at the same speed and sequence as the speed and sequence at which the data was received (col. 165 lines 12-25; col. 149 lines 65-15; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12).

Koga teaches a Time Division Multiplex Control mechanism (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).



16. As per claim 11, Laurenti teaches the parallel processing system wherein the particular function includes cryptography (col. 75 lines 15-40; col. 111 lines 28-33; col. 304 lines 3-10).

17. As per claim 12, Laurenti teaches a system wherein:

at least one buffer having a first connection that ports to a network, a second connection that ports to a network, a third connection that ports to a process and a fourth connection that ports to the process (abstract; col. 8 lines 37-49; col. 8 lines 60-67) ; and a control circuit that generates a Fast Write Phase in which data is received at the first connection at a first speed, a Slow Read Phase at which data is transferred from the buffer through the third connection at a second speed, a Slow Write Phase in which data is written from the fourth connection into the buffer at the second speed and a Fast Read Phase in which data is transferred from the buffer to the second connection at the first speed (fig. 15, 16,19,20,23,24,140; col. 157 lines 50-60; col. 158 lines 1-28; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12).

Koga teaches a Time Division Multiplex Control mechanism (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).

18. As per claim 13, Laurenti teaches a system further including a process engine operatively coupled to the third connection and the fourth connection (abstract; col. 8 lines 37-49; col. 8 lines 60-67).

19. As per claim 14, Laurenti teaches a system wherein: the process engine includes a cryptographic unit (col. 75 lines 15-40; col. 111 lines 28-33; col. 304 lines 3-10).
20. As per claim 15, Laurenti teaches a parallel processing system wherein the predetermined size data block includes a data frame or data packet. (col. 158 lines 1-28; col. 166 lines 37-48; col. 154 lines 60-65; col. 161 lines 1-12).
21. As per claim 16, Laurenti teaches a parallel processing system wherein the space monitoring circuit arrangement includes a boundary MUX having an input from the buffer counter and a plurality of inputs of boundary signals one from each buffer indicating address reached in each buffer at end of fast write phase(col. 9 lines 21-30; col. 2 lines 50-57; col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46);  
a subtractor responsive to output signal from the boundary MUX and output signal from the time base counter(col. 9 lines 21-30; col. 165 lines 12-25; col. 149 lines 65-15; col. 166 lines 37-48); and  
a comparator responsive to an output signal from said subtractor and a signal indicating length of the data frame (col. 9 lines 21-30).
22. As per claim 17, Laurenti teaches a parallel processing system wherein the particular function includes any data processing system (fig. 1, 10; col. 1 lines 51-65; col. 2 lines 50-57; col. 98 lines 1-45)

23. As per claim 18, Laurenti teaches a parallel processing system wherein the particular function includes any data processing function whose processing time is proportional to frame length (col. 98 lines 1-45; col. 98 lines 55-67; col. 99 lines 24-37; col. 100 lines 10-46).

***Response to Arguments***

24. Applicant's arguments filed 8/23/05 have been fully considered but they are not persuasive. Applicant states Koga does not teach the use of a TDM system in conjunction with buffers. However, Koga clearly teaches a TDM system that could be used with different types of buffers over data bus lines (col. 3 lines 50-57; col. 2 lines 10-23; col. 7 lines 32-50).

***Conclusion***

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh Shah whose telephone number is (571)272-3771. The examiner can normally be reached on 9-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2195

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nilesh Shah  
Examiner  
Art Unit 2195

NS  
November 30, 2005

  
MENG-AL T. AN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER